

REMARKS/DISCUSSION OF ISSUES

Claims 5, 9, 11-13, 15-18 and 23-33 remain pending in the application.

**THE EXAMINER IS ONCE AGAIN RESPECTFULLY
REQUESTED TO STATE WHETHER THE DRAWINGS ARE
ACCEPTABLE.**

A new Office Action is respectfully requested, and reexamination and reconsideration of the present application are respectfully requested in view of the following Remarks.

REQUEST FOR NEW OFFICE ACTION

The Office Action Summary states that claims 5, 9, 11-13, 15-18 and 23-33 are all rejected.

However, the Office Action fails to state any statutory basis at all for the rejection of claims 27-33.

Meanwhile, M.P.E.P. § 707.07(d) provides that:

Where a claim is refused for any reason relating to the merits thereof it should be "rejected" and the ground of rejection fully and clearly stated, and the word "reject" must be used. The examiner should designate the statutory basis for any ground of rejection by express reference to a section of 35 U.S.C. in the opening sentence of each ground of rejection. If the claim is rejected as broader than the enabling disclosure, the reason for so holding should be given; if rejected as indefinite the examiner should point out wherein the indefiniteness resides; or if rejected as incomplete, the element or elements lacking should be specified, or the applicant be otherwise advised as to what the claim requires to render it complete

(emphasis added).

Here, the Examiner has failed to explicitly provide a statutory basis for the

rejection of claims 27-33, or to fully and clearly state the ground of rejection of these claims. Accordingly, if a rejection of these claims is to be maintained, Applicants respectfully request a new Office Action that fully and clearly states any ground of rejection of these claims.

Also, page 4 of the Office Action alludes generally to claims 11-12 and 23-33 without setting forth any statutory basis for their rejection. If any rejection of claims 11-12 and 23-26 is maintained other than the non-statutory double-patenting rejection, then Applicants respectfully request that a new Office Action be provided that complies with M.P.E.P. § 707.07(d) by fully and clearly stating the ground of rejection, and using the word "reject."

Finally, Applicants respectfully submit that even if claims 23-33 were actually rejected, the rejection would be improper under M.P.E.P. § 707.07(d). M.P.E.P. § 707.07(d) "IMPROPERLY EXPRESSED REJECTIONS" provides that:

An omnibus rejection of the claim "on the references and for the reasons of record" is stereotyped and usually not informative and should therefore be avoided. This is especially true where certain claims have been rejected on one ground and other claims on another ground. A plurality of claims should never be grouped together in a common rejection, unless that rejection is equally applicable to all claims in the group.

Here, the Office Action states, without any further comment or explanation, that "*[i]n regards to claims 23-33, claimed subject matters are disclosed as explained in the claims 5,9,11-13,15-18, above.*" That is improper under M.P.E.P. § 707.07(d), and it is "especially" improper because "*certain claims* (i.e., claims 9 and 16) *have been rejected on one ground and other claims* (i.e., claims 5, 13, 15 and 17-18) *on another ground.*"

Furthermore, the assertion that the subject matter of claims 23-33 is disclosed as explained in the claims 5, 9, 11-13, and 15-18 is clearly wrong, as claims 23-33

include features not recited anywhere in the claims 5, 9, 11-13 and 15-28. For example, claim 27 includes an inverter coupled to an output of the regulating circuit and in response thereto generating a chopped DC voltage signal to be coupled to the primary winding of the transformer, wherein the regulating circuit provides a signal to the inverter to set a frequency and a duty cycle of the chopped DC voltage signal. None of the claims 5, 9, 11-13 and 15-28 make any mention of any chopped DC voltage, or a signal to set a duty cycle of a chopped DC voltage. So it is not even possible for the “*claimed subject matters (sic)*” of “*claims 23-33 [to have been] disclosed as explained in the claims 5-9, 11-13, 15-18 above*” as alleged by the Office Action.

Accordingly, for at least all of these reasons, Applicants respectfully request a new Office Action in full compliance with M.P.E.P. § 707.07(d).

35 U.S.C. § 102 & 103

The Office Action rejects: claims 9 and 16 under 35 U.S.C. § 102 over Liu et al. U.S. Patent 5,363,287 (“Liu”); and claims 5, 13, 15 and 17-18 under 35 U.S.C. § 103 over Cathell et al. U.S. Patent 5,121,314 (“Cathell”) in view of Rozman EP 0602835A1 (“Rozman”) and further in view of Eng U.S. Patent 4,623,960 (“Eng”) and Steigerwald et al. U.S. Patent 4,695,934 (“Steigerwald”)

Applicants respectfully traverse all of these rejections for at least the following reasons.

Claim 9

Among other things, in the resonant converter of claim 9 different ratios of output voltage to number of turns are provided in respect of associated secondary windings having different winding directions.

Applicants respectfully submit that Liu does not disclose any resonant converter including such a combination of features.

The Office Action states that “Liu et al. disclose . . . a resonant converter including . . . at least two secondary windings” (citing FIG. 2) “and different winding direction” (citing FIG. 2) “and different ratio of output voltage” (citing FIG. 1 and cols. 4 lines 25-30 and col. 6, lines 15-20).

At the outset, Applicants note that FIGs. 1 and 2 of Liu pertain to two completely different devices - FIG. 1 pertaining to a “prior art” converter, and FIG. 2 showing a converter according to Liu’s invention. Meanwhile, claim 9 is directed to a single converter including all of the recited features. It is very well established under U.S. patent law and the M.P.E.P. that a rejection of claim 9 under 35 U.S.C. § 102 over Liu cannot be maintained unless Liu discloses a single device including each and every feature of claim 9.

Here, the device of FIG. 2 clearly does not show any “secondary windings having different winding directions.” So FIG. 2 cannot possibly disclose the resonant converter of claim 9 and can be discarded from further discussion.

Meanwhile, FIG. 1 does not show that different ratios of output voltage to number of turns are provided, but instead merely shows that “different ratio of output voltage” are provided, as stated in the Office Action. However, of course that is not what claim 9 recites! Furthermore, the cited text at col. 4 and 6 of Liu does not even apply to the converter of FIG. 1, but instead applies to the converter of FIG. 2, which has already been shown cannot correspond to the recited resonant converter of claim 9. In any event, Applicants do not see where the cited text discloses that different ratios of output voltage to number of turns are provided in respect of associated secondary windings having different winding directions.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 9 is patentable over Liu.

Claim 16

Claim 16 depends from claim 9 and is deemed patentable for at least the reasons set forth above with respect to claim 9. Also, claims 23-24 and 28-30 depend variously from claim 9 and are also deemed patentable over Liu for at least the reasons set forth above.

Claim 5

Among other things, the resonant converter of claim 5 includes a transformer with a primary winding and at least two secondary windings of different winding directions; a capacitive element in series with the primary winding; at least one

external inductive element in series with the capacitive element and the primary winding.

The Examiner states that this is disclosed by Cathell in FIG. 1, element 12; FIG. 6A, element 31; and the text at col. 5, lines 54-56 and col. 6, lines 1-35.

Applicants respectfully disagree. FIG. 1 of Cathell shows a power transformer 12, but it does not show at least two secondary windings of the power transformer 12 having different winding directions. Meanwhile, the cited text at col. 5, lines 54-56 and col. 6, lines 1-35 also makes no mention of at least two secondary windings of power transformer 12 having different winding directions. So power transformer 12 cannot possibly correspond to the transformer of claim 5.

FIG. 6A shows an embodiment of the completely separate drive transformer 37 of FIG. 1, which does have two secondary windings of different winding directions.¹ However, the drive transformer 37 does not include either: (1) a capacitive element in series with the primary winding; or (2) at least one external inductive element in series with the capacitive element and the primary winding. So drive transformer 37 also cannot possibly correspond to the transformer of claim 5.

The Examiner fails to assert that either Rozman, Eng, or Steigerwald discloses a transformer with such a combination of features,² or even that it would have been obvious to modify Cathell to include such a feature. Accordingly, no possible combination of Cathell, Rozman, Eng, and Steigerwald could ever produce the resonant converter of claim 5.

Also among other things, the resonant converter of claim 5 includes multiple outputs coupled to the secondary windings of the transformer.

The Office Action does not make any mention of this feature. The Office Action does not assert that this feature is disclosed by Cathell – or any of the other

1 FIG. 6A of Cathell mislabels the drive transformer as element "31" - which is not mentioned anywhere in the specification - instead of element 37. However, the text at col. 13, lines 44-47 clearly discloses that FIG. 6A shows the drive transformer 37 of FIG. 1.

2 In fact, the Office Action completely fails to explain how or why Rozman, Eng, or Steigerwald are relevant at all to the rejection of claim 9! Indeed, Steigerwald is not even mentioned in any of the text pertaining to the rejections of claims 5, 13, 15 or 17-18.

references, individually or collectively. Meanwhile, the power transformer 12 of FIG. 1 of Cathell apparently only has a single output, V_{OUT} .

Finally, the resonant frequency of the resonant converter of claim 5 is determined by the main inductance and the leakage inductances of the transformer, the capacitive element, and the external inductive element.

Again, the Office Action does not make any mention of this feature.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 5 is patentable over the cited prior art.

Claims 13, 17, and 18

Claims 13, 17 and 18 depend from claim 5 and are deemed patentable for at least the reasons set forth above with respect to claim 5, and for the following additional reasons.

Claim 17

Among other things, in the resonant converter of claim 17, the transformer has a first group of secondary windings with one or more secondary windings having a first winding direction and a second group of secondary windings with one or more secondary windings having a second winding direction, at least two of the secondary windings being electrically connected to one another.

Applicants respectfully submit that the prior art taken individually or collectively does not disclose such a combination of features. Indeed, the Office Action fails to mention “a first group of secondary windings with one or more secondary windings having a first winding direction and a second group of secondary windings with one or more secondary windings having a second winding direction.” So for at least that reason alone the rejection of claim 17 cannot stand.

Furthermore, Applicants traverse the proposed modification of Cathell with Eng as lacking any proper motivation or suggestion and as rendering Cathell's invention to be nonfunctioning.

The Office Action fails to cite any teaching or disclosure in the prior art in support of its proposed motivation to modify Cathell. Furthermore, the Office Action fails to explain how Cathell's invention is even supposed to work if one electrically

connected two of the secondary windings 16a . . . 16n to each other.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claim 17 is patentable over the cited prior art.

Claim 18

Claim 18 also depends from claim 17 and is patentable for at least all of the reasons set forth above with respect to claim 17.

Also, among other things, in the resonant converter of claim 18, the secondary windings are connected to a ground potential. Again – as is so often the case in this Office Action – the Examiner fails to make any mention whatsoever of this feature. So for at least that reason alone the rejection of claim 18 cannot stand.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claim 18 is patentable over the cited prior art.

Claim 15

The resonant converter of claim 15 comprises: (1) multiple outputs; and a transformer with a primary winding and at least two secondary windings of different winding directions, (2) wherein the secondary windings of the transformer are connected to the converter outputs by way of one diode and one output filter each, and (3) wherein the transformer has a first group of secondary windings with one or more secondary windings having a first winding direction and a second group of secondary windings with one or more secondary windings having a second winding direction, at least two of the secondary windings being electrically separated from one another.

The Office Action fails to even mention any of the three features of claim 15 that are highlighted above. So for at least that reason alone the rejection of claim 15 cannot stand.

Furthermore, Applicants respectfully submit that none of the references individually or collectively disclose a resonant transformer as recited in claim 15 with multiple outputs, where secondary windings of the transformer are connected to the converter outputs by way of one diode and one output filter each.

Accordingly, for at least these reasons, Applicants respectfully submit that

claim 15 is patentable over the cited prior art.

DOUBLE PATENTING REJECTION

The Office Action also rejects claims 5, 9, 11- 13, 15-18 and 23-26 on the basis of the judicially created doctrine of double patenting over U.S. Patent 6,721,191 which issued from the very same parent application from which this application claims priority.

Applicants will consider filing an appropriate Terminal Disclaimer after the application is otherwise in condition for allowance such that no further claim amendments are to be entered with respect to the application.

CONCLUSION

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 5, 9, 11-13, 15-18 and 23-33, and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment (except for the issue fee) to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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